



AFCTN Test Report

94-140

AFCTB-ID
94-087



TMSS Parsing Test

**MIL-M-9977J, Appendix F,
Nonnuclear Munitions Loading
Standard Data Packages**

Document Type Definition

MAXIMA Corporation

DISA Contract #DCA100-93-D-0065

Quick Short Test Report

23 June 1994

19960408 042



Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
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23 June 1994

Prepared By
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Air Force CALS Test Bed

Notification of Test Results

23 June 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

MAXIMA Corporation

Identified as follows:

Title: **MIL-M-9977J, Appendix F, Nonnuclear Munitions Loading Standard Data Packages, DTD Parsing Test**
Program: **DISA**
Program Office: **DISA**
Contract No.: **DCA100-93-D-0065**
QSTR No.: **AFCTB-ID 94-087**

Received on the following media: **3.5" Diskette**

The results of the QSTR evaluation are as follows:

MIL-STD-1840A	Media Format:	N/A
MIL-D-28000A	IGES:	N/A
MIL-M-28001B	SGML:	Pass
MIL-R-28002A	Raster:	N/A
MIL-D-28003	CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

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Contents

1. Introduction.....	1
1.1. Background.....	1
1.2. Purpose.....	2
2. Test Parameters.....	3
3. 1840A Analysis.....	4
3.1. External Packaging.....	4
4. SGML Analysis.....	4
4.1. Exoterica Validator.....	5
4.2. Exoterica XGML Normalizer.....	6
4.3. Public Domain sgmls.....	6
4.4. McAfee & McAdams Sema Mark-it.....	6
5. Conclusions and Recommendations.....	7
6. Appendix A - Detailed SGML Analysis.....	8
6.1. Exoterica Validator.....	8
6.2. Public Domain sgmls Log.....	10
6.3. McAfee & McAdams Sema Mark-it Parser Log.....	11
6.4. D977JF0.ORG.....	12

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of this informal test is to analyze Air Force Document Type Definitions (DTDs) for Standard Generalized Markup Language (SGML) syntax, using several commercial and public domain SGML parsers, prior to placing them in the Defense Information Systems Agency (DISA) Asset Source for Software Engineering Technology (ASSET) repository.

2. Test Parameters

Test Plan: AFCTB 94-087

Date of Evaluation: 23 June 1994

Evaluator: George Elwood
Air Force CALS Test Bed
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Suite 300
Dayton OH 45431-1672

Data Originator: Kay Hill
MAXIMA Corporation
2372 Lakeview Drive
Beavercreek OH 45431
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Data Description: Technical Manual Test
1 DTD

Data Source System:

Text/SGML
SOFTWARE
Unknown

Evaluation Tools Used:

MIL-M-28001 (SGML)
PC 486/50
Exoterica XGMNormalizer v1.2e3.2
Exoterica Validator v2.2 exl
McAfee & McAdam Sema Mark-it v2.3
Public Domain sgmls 1.1

Standards Tested: MIL-M-28001B

3. 1840A Analysis

3.1 External Packaging

The 3.5" diskette was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in any type of container.

The files received by the AFCTB were not MIL-STD-1840A. The files were not named per the standard conventions, as the stated purpose of the evaluation was the basic data structure.

4. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report.

The goal was to configure the DTD under analysis as it would normally be used. However, for this analysis it was necessary to modify the DTD adding the "DOCTYPE doc [" statement to the start and the companion "]>" to the end of the DTD under evaluation, as stated in the comments of the DTD. If the parser did not support a formal file pointing to the location of the ISO character sets, this was added.

The DTD under evaluation, MIL-M-9977J, Appendix F, Nonnuclear Munitions Loading Standard Data Package, called a companion DTDs, which was delivered on the same diskette as the DTD to be evaluated. This DTD was used without change except to insert the location of the ISO character set files. See diagram below.

MIL-M-9977J Nonnuclear Munitions Loading Standard Data Packages DTD

D977JFO.ORG --> D784CBO.A3

The following notes apply to the parsing analysis as indicated in the ensuing paragraphs.

- Note 1. Entity parameters defined more than once is a valid SGML construct. The duplicate definition errors and/or warnings in this analysis do not indicate any problems.
- Note 2. Some of the parsers report mixed content model warnings. The use of such content models is normally unnecessary and therefore not normally recommended. Record boundaries within elements of associated instances may be misinterpreted where a mixed content model exists in the DTD.
- Note 3. The occurrences of warnings "references defined, but not used," appeared because portions of the called DTD, i.e., MIL-M38784C, were not used. They were not used because the entity definitions of the DTD under analysis altered the execution path in the called DTD. The warnings in this analysis do not indicate any problems.

4.1 Exoterica Validator

The DTD file was evaluated using the Exoterica Validator *exl* parser. The basic DTD was modified by placing the concrete syntax file and "<!DOCTYPE doc [" at the start and the "]>" at the end. No errors were reported by the parser.

The parser reported 63 total warnings of two types. The first warning was a parameter entity declared more than once. See Note 1 above.

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 107,  
    used in "\xgml\9487.dtd", line 161:  
    A parameter entity name has been declared more than once.  
    The entity is "%frnt".  
    <!ENTITY % frnt "(idinfo, warnpage?, chginssht?, lep, verstat?,  
    ^-->  
    -->
```

The second type warning related to elements defined but not used in any content model. See Note 3 above.

```
<!-- **Warning** in "\xgml\x9487.dtd", line 326:  
  An element is not allowed in the document instance because it does not  
  appear in any accessible content model or it is completely excluded.  
  The element is "ABBRSECT".  
-->
```

4.2 Exoterica XGML Normalizer

The DTD file was parsed using the Exoterica *XGMLNormalizer* parser. The concrete syntax and "<!DOCTYPE doc [" were added to the start and "]>" to the end of the file. No errors or warnings were issued by this utility.

4.3 Public Domain sgmls

The DTD file was evaluated using the Public Domain *sgmls* v1.1 parser. The file was modified by adding the "<!DOCTYPE doc [" to the start and "]>" to the end of the file as stated in the comments in the DTD. File D784CB0.A3 location was inserted into the DTD. No errors were reported by the parser.

The parser reported 8 total warnings of the same type. This warning was duplicate definitions. See Note 1 above.

```
sgmls: In file included at \ws\x9487.dtd, line 89:  
  Warning at i:\dtd\784c.dtd, line 109 in declaration parameter 4:  
  Duplicate specification occurred for "%frnt"; duplicate ignored
```

4.4 Sema Mark-it

The DTD file was evaluated using McAfee & McAdam's *Sema Mark-it* v2.3 parser. The file was modified by adding the concrete syntax and "<!DOCTYPE doc [" to the start and "]>" to the end of the file. The parser reported no errors or warnings for the file.

5. Conclusions and Recommendations

The file D977JF0.ORG, MIL-M-9977J, Appendix F, Nonnuclear Munitions Loading Standard Data Package, conforms to the SGML syntax of ISO Standard 8879, as required by the CALS MIL-M-28001B specification.

The errors, warnings, and comments reported by the parsers used in this evaluation do not indicate invalid SGML syntax. However, the mixed content model flagged by warnings from one of the five parsers, may cause problems in the use of this DTD. See Note 3, Paragraph 4, above.

Recommend the DTD be changed to eliminate the mixed content model. If this is not possible, users should be alerted to the potential problems that may occur in the application of the DTD, and proper guidance should be provided users to avoid the potential problems in the use of this DTD.

6. Appendix A - Detailed SGML Analysis

6.1 Exoterica Validator

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%38784c"), line 107,
     used in "\xgml\9487.dtd", line 161:
A parameter entity name has been declared more than once.
The entity is "%frnt".
<!ENTITY % frnt "(idinfo, warnpage?, chginssht?, lep, verstat?,
     ^^^^

-->
The entity is "%idinf".
The entity is "%bodyele".

<!-- **Warning** in "\xgml\9487.dtd", line 326:
     An element is not allowed in the document instance because it does not appear in
     accessible content model or it is completely excluded.
The element is "ABBRSECT".
-->
The element is "ADDRESS".
The element is "APPENDIX".
The element is "AUTHNOT".
The element is "CHAPTER".
The element is "CHGINSSHT".
The element is "CHGLIST".
The element is "CHGREC".
The element is "CONTENTS".
The element is "DATE".
The element is "DATEINC".
The element is "DDCHAPTER".
The element is "DDDESC".
The element is "DDINDEX".
The element is "DDINTRO".
The element is "DDLIST".
The element is "DDSHEET".
The element is "DESTR".
The element is "DISCL".
The element is "DOC".
The element is "DOCPART".
The element is "DOCPARTN".
The element is "ECPNO".
The element is "FOLDSECT".
The element is "FOREWORD".
The element is "GLOSSARY".
The element is "ILLUSLIST".
The element is "INDEX".
```

```
The element is "INSERTPG".  
The element is "INTERNATLSTD".  
The element is "INTRO"  
The element is "LRP".  
The element is "MAINTLVL".  
The element is "MFR".  
The element is "PARAO".  
The element is "PGNO".  
The element is "PRECAUT".  
The element is "PREFACE".  
The element is "PRETMIDNO".  
The element is "RATD".  
The element is "REAR".  
The element is "REMARKS".  
The element is "REMOVEPG".  
The element is "REVNUM".  
The element is "SAFESUM".  
The element is "SEAL".  
The element is "SECTION".  
The element is "SHORTTITLE".  
The element is "SYMSECT".  
The element is "TABLELIST".  
The element is "TCTOLIST".  
The element is "TCTONO".  
The element is "TMIMPREP".  
The element is "TYPENO".  
The element is "VERSTAT".  
The element is "VOLNOT".  
The element is "VOLNUM".  
The element is "VOLUME".  
The element is "WARNPAGE".
```

-->

```
<!-- Capacity points/limits:  
    TOTALCAP =129853/200000  
    ENTCAP   =13216/200000  
    ENTCHCAP =12816/70000  
    ELEMCAP  =5376/70000  
    GRPCAP   =30560/70000  
    EXGRPCAP =832/70000  
    EXNMCAP  =1536/70000  
    ATTCAP   =46144/200000  
    ATTCHCAP =1184/70000  
    AVGRPCAP =18560/70000  
    NOTCAP   =96/70000  
    NOTCHCAP =163/70000  
    IDCAP    =0/70000  
    IDREFCAP =0/70000  
    MAPCAP   =0/70000
```

```
LKSETCAP =0/70000
LKNMCAP =0/70000
-->
<!-- 0 errors and 63 warnings reported. -->
```

6.2 Public Domain sgmls Log

```
sgmls: In file included at \ws\9487.dtd, line 89:
      Warning at i:\dtd\784c.dtd, line 109 in declaration parameter 4:
      Duplicate specification occurred for "%frnt"; duplicate ignored
sgmls: In file included at \ws\9487.dtd, line 89:
      Warning at i:\dtd\784c.dtd, line 115 in declaration parameter 4:
      Duplicate specification occurred for "%idinf"; duplicate ignored
sgmls: In file included at \ws\9486.dtd, line 70:
      Warning at i:\dtd\784c.dtd, line 165 in declaration parameter 4:
      Duplicate specification occurred for "%bodyele"; duplicate ignored
```

```
TOTALCAP 129494
ENTCAP 13216
ENTCHCAP 11795
ELEMCAP 5376
GRPCAP 30560
EXGRPCAP 864
EXNMCAP 1536
ATTCAP 46144
ATTCHCAP 1184
AVGRPCAP 18560
NOTCAP 96
NOTCHCAP 163
IDCAP 0
IDREFCAP 0
MAPCAP 0
LKSETCAP 0
LKNMCAP 0
```

6.3 Sema Mark-it Parser Log

```
ATTCNT --100-- 48
ATTSPLEN --960-- 0
BSEQLEN --960-- 0
DTAGLEN --16-- 0
DTEMPLEN --16-- 0
ENTLVL --16-- 2
GRPCNT --32-- 13
GRPGTCNT --96-- 26
GRPLVL --16-- 5
LITLEN --3048-- 730
NAMELEN --32-- 13
NORMSEP --2-- 0
PILEN --240-- 0
TAGLEN --960-- 0
TAGLVL --24-- 0
MSDLVL --24-- 1
TOTALCAP --200000-- 137622
ENTCAP --200000-- 16448
ENTCHCAP --70000-- 11894
ELEMCAP --70000-- 5376
GRPCAP --70000-- 35360
EXGRPCAP --70000-- 864
EXNMCAP --70000-- 1536
ATTCAP --200000-- 46144
ATTCHCAP --70000-- 1184
AVGRPCAP --70000-- 18560
NOTCAP --70000-- 96
NOTCHCAP --70000-- 160
IDCAP --70000-- 0
IDREFCAP --70000-- 0
MAPCAP --70000-- 0
LKSETCAP --70000-- 0
LKNMCAP --70000-- 0
```

6.4 D977JF0.ORG

```
<!-- ***** START OF FILE ***** -->

<!-- SUPPLEMENT NOTICE: This file is made available to provide the user with
a digital representation of the DTD found in Appendix D of MIL-M-5096E.
This file is incomplete without MIL-M-5096E. -->

<!-- NOTE: The start and end of this file are marked with a row of asterisks.
If these rows are not present the file may not be complete! -->

<!-- MIL-M-9977J Nonnuclear Munitions Loading Standard Data Packages DTD

<!-- The following set of declarations may be referred to by
using a public entity as follows:

<!ENTITY % mnnmundp PUBLIC "-//USA-DOD//DTD MIL-M-9977J MDP//EN"
>
%mieturn;
-->

<!-- NOTE: In order to parse the following DTD subset alone,
append the following statement to the beginning of the file:

<!DOCTYPE docnnmundp [
and the associated "]>" to the end of the file. -->

<!-- ENTITY DECLARATIONS -->

<!ENTITY % bodyele "(munitdesc, stdmunld, stdmununld) " >
<!ENTITY % m38784c PUBLIC "-//USA-DOD//DTD MIL-M-38784C//EN" >
<!ENTITY % frnt "(idinfo, lep)" >
<!ENTITY % idinf "(tmidno, doctype, prttitle, stitle?, supersed?, suppl*, distrib, expc
downgrd?, pubdate, (chgnum, chgdate)?)" >
<!ENTITY notel "<note>List all SE, except common hand tools, required to load/unload
munitions on/off aircraft.</note>" >
<!ENTITY note10 "<note>Implement those procedures required to prepare the aircraft for
unloading munitions from aircraft. </note>" >
<!ENTITY note11 "<note>Implement those procedures required for unloading the munitions
the aircraft.</note>" >
```

```
<!ENTITY note2 "<note>Refer to Chapter 1, Section &sec1;, for applicable aircraft preparation. Refer to Chapter 1, Section &sec12;, for FCT\functional checks. Refer to Chapter1, Section &sec3;, for stray voltage checks.</note> <step1>Perform aircraft preparation.<step1>Perform required FCT\functional checks.<step1>Perform required stray voltage checks." >

<!ENTITY note3 "<note>Implement those procedures required for loading</note>" >

<!ENTITY note4 "<note>Implement those procedures required for stray voltage checks at impulse cartridge breeches and installation of impulse cartridges.<note>" >

<!ENTITY note5 "<note>Implement those procedures required for checking that all pertinent aircraft steps have been accomplished.</note>" >

<!ENTITY note6 "<note>Omission of, or options relating to the following step(s) may be dictated by the local commander.</note>" >

<!ENTITY note7 "<note>Implement those procedures required to place the aircraft in appropriate delayed flight or alert status.</note>" >

<!ENTITY note8 "<note>\>Implement those procedures required for preparing the aircraft for launch.<note>" >

<!ENTITY note9 "<note>Implement those procedures required to safe the aircraft.</note>

<!ENTITY sec1 "User supplies information here." >

<!ENTITY sec2 "User supplies information here." >

<!ENTITY sec3 "User supplies information here." >

%m38784c;

<!-- ELEMENT and ATTRIBUTE LIST DECLARATIONS -->

<!ELEMENT airprep      - o  (%parazero;) >
<!ATTLIST airprep    tocentry %yesorno; "1"
                     shortentry %yesorno; "0"
                     verified %yesorno; "0"
                     %bodyatt;
                     %secur; >

<!ELEMENT bombfz      - o  (%parazero;) >
<!ATTLIST bombfz    tocentry %yesorno; "1"
                     shortentry %yesorno; "0"
                     verified %yesorno; "0"
                     %secur;
                     %bodyatt; >
```

```
<!ELEMENT cartins      - o  (%parazero;) >
<!ATTLIST cartins    tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      verified %yesorno; "0"
                      %bodyatt;
                      %secur; >

<!ELEMENT desc         - o  (parazero;) >
<!ATTLIST desc        tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      verified %yesorno; "0"
                      %bodyatt;
                      %secur; >

<!ELEMENT dlayflit     - o  (%parazero;) >
<!ATTLIST dlayflit    tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      verified %yesorno; "0"
                      %bodyatt;
                      %secur; >

<!ELEMENT docnnmundp   - o  (%parazero;) >
<!ATTLIST docnnmundp  tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      verified %yesorno; "0"
                      %bodyatt;
                      %secur; >

<!ELEMENT fuzerem      - o  (%parazero;) >
<!ATTLIST fuzerem     tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      verified %yesorno; "0"
                      %bodyatt;
                      %secur; >

<!ELEMENT mpreunload    - o  (%parazero;) >
<!ATTLIST mpreunload   tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      verified %yesorno; "0"
                      %bodyatt;
                      %secur; >

<!ELEMENT munitdesc     - -  (desc, bombfz)  +(figure | table |
                                         foldout) >
<!ATTLIST munitdesc    tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      %bodyatt;
                      %secur; >
```

```
<!ELEMENT munitload
<!ATTLIST munitload
          - o (%parazero;) >
          tocentry %yesorno; "1"
          shortentry %yesorno; "0"
          verified %yesorno; "0"
          %secur;
          %bodyatt;
          %secur; >

<!ELEMENT postldinsp
<!ATTLIST postldinsp
          - o (%parazero;) >
          tocentry %yesorno; "1"
          shortentry %yesorno; "0"
          verified %yesorno; "0"
          %bodyatt;
          %secur; >

<!ELEMENT priorlnch
<!ATTLIST priorlnch
          - o (%parazero;) >
          tocentry %yesorno; "1"
          shortentry %yesorno; "0"
          verified %yesorno; "0"
          %bodyatt;
          %secur; >

<!ELEMENT safing
<!ATTLIST safing
          - o (%parazero;) >
          tocentry %yesorno; "1"
          shortentry %yesorno; "0"
          verified %yesorno; "0"
          %bodyatt;
          %secur; >

<!ELEMENT specsafreq
<!ATTLIST specsafreq
          - o (%parazero;) >
          tocentry %yesorno; "1"
          shortentry %yesorno; "0"
          verified %yesorno; "0"
          %bodyatt;
          %secur; >

<!ELEMENT stdmunld -- (suppequip, specsafreq, airprep,
          munitprep, (cartins & munitload),
          postldinsp, dlayflt, priorlnch) +
          (figure | table | foldout) >
<!ATTLIST stdmunld
          tocentry %yesorno; "1"
          shortentry %yesorno; "0"
          %bodyatt;
          %secur; >
```

```
<!ELEMENT suppequip      - o  (%parazero;) >
<!ATTLIST suppequip    tocentry %yesorno; "1"
                        shortentry %yesorno; "0"
                        verified %yesorno; "0"
                        %bodyatt;
                        %secur; >

<!ELEMENT unload         - o  (%parazero;) >
<!ATTLIST unload        tocentry %yesorno; "1"
                        shortentry %yesorno; "0"
                        verified %yesorno; "0"
                        %bodyatt;
                        %secur; >

<!-- ***** END OF FILE ***** -->
```